

Claims

1. An airbag unit comprising

5 - an airbag (3),

- a flat supporting element (2), in front of whose one surface (21) the airbag (3) is arranged and which has an opening (20) for fixing the airbag
10 (3) on the supporting element (2), and

- a retaining element (1) which interacts with the supporting element (2) in order to fix the airbag (3) thereon,

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one section (32) of the airbag (3) extending through the opening (20) of the supporting element (2) to the other side of the supporting element (2) and being retained there in front of the other surface (22) of
20 the supporting element (2) by means of the retaining element (1),

characterized

25 in that the dimensions of the opening (20) of the supporting element (2), on the one hand, and of the retaining element (1), on the other hand, are coordinated with one another in such a manner that the retaining element (1) can be guided through the opening
30 (20) in a first spatial orientation and an edge region of the opening (20) prevents the retaining element (1) from being guided through in at least one second spatial orientation of the retaining element (1).

35 2. The airbag unit as claimed in claim 1, characterized in that the airbag section (32) holds the retaining element (1).

3. The airbag unit as claimed in claim 1 or 2, characterized in that the airbag section (32) is retained in a form-fitting manner on the supporting element (2) by the retaining element (1).

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4. The airbag unit as claimed in claim 3, characterized in that the retaining element (1) reaches behind the edge of the opening (20) of the supporting element (2).

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5. The airbag unit as claimed in one of the preceding claims, characterized in that the retaining element (1) is designed as a retaining plate which, when aligned essentially parallel to the associated surface (22) of the supporting element (2), reaches behind the edge of the opening (20) of the supporting element (2) and, when aligned essentially vertically with respect to the associated surface (22) of the supporting element (2), can be guided through the opening (20) of the supporting element (2).

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6. The airbag unit as claimed in one of the preceding claims, characterized in that the opening (20) of the supporting element has a slot of defined width (B) and slot length (L), and in that the retaining element (1) is designed as a retaining plate having such a thickness (D) and having such edge lengths (l, l') that the thickness (d) of the retaining plate (1) is smaller than the width (B) of the slot (20) and at least one edge length (l, l') of the retaining plate (1) is smaller than the slot length (L).

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7. The airbag unit as claimed in one of the preceding claims,

characterized in that the retaining element (1) has a throughflow opening (10) and the airbag (3) has an inflow opening (30) in the region of the airbag section (32), said openings interacting with the opening (20) of the supporting element (2) to form a passage for gas.

8. The airbag unit as claimed in claim 7, having a gas generator (4) for inflating the airbag (3), characterized in that the outflow opening (4) of the gas generator (4) and the inflow opening (30) of the airbag (3) are positioned with respect to each other in such a manner that the gas produced by the gas generator (4) can flow into the airbag (3).

9. The airbag unit as claimed in claim 7 or 8, characterized in that, in order to position the retaining element (1) with respect to the supporting element (2), a tubular element (6) is arranged in such a manner that the tubular element (6) protrudes through the throughflow opening (10) of the retaining element (1) and the opening (20) of the supporting element (2).

10. The airbag unit as claimed in claim 9, characterized in that the tubular element (6) is of hollow-cylindrical design.

11. The airbag unit as claimed in claim 9 or 10, characterized in that the gas generator (4) has a tubular element (6) which is arranged on the outflow opening (40) and protrudes through the inflow opening (30) of the airbag (3), the throughflow opening (10) of the retaining element (1) and the opening (20) of the supporting element (2).

12. The airbag unit as claimed in claim 11 or 12, characterized in that the retaining element (1) is provided with a tubular element (6, 16) which is arranged on the throughflow opening (10) of the retaining element (1) and is positioned with respect to the supporting element (2) in such a manner that it protrudes through the opening (20) of the supporting element (2).

13. The airbag unit as claimed in claim 12, characterized in that the retaining element (1) and the tubular element (6, 16) form a single-part or a multi-part subassembly.

14. The airbag unit as claimed in one of claims 8 to 13, characterized in that the supporting element (2) is part of a housing (5) which surrounds the gas generator (4) at least in some sections.

15. The airbag unit as claimed in one of claims 8 to 13, characterized in that a multi-part retaining device (7, 7', 58, 540, 550, 800, 840, 860) is provided for holding the gas generator (4).

16. The airbag unit as claimed in claim 15, characterized in that the retaining device (7, 7') retains the supporting element (2), which is of essentially flat design, at a defined distance from the gas generator (4) and surrounds the gas generator (4) at least in some sections.

17. The airbag unit as claimed in claim 15 or 16, characterized in that the retaining device (7, 7') is formed by two hose clips (7, 7') which have a means (11) for holding

the supporting element (2).

18. The airbag unit as claimed in claim 17, characterized in that the means (11) for holding the
5 supporting element (2) is designed as an aperture.

19. The airbag unit as claimed in one of claims 15 to 18, characterized in that a first hose clip (7) and a second hose clip (7') are arranged on both sides of the
10 outflow opening (40) of the gas generator (4), in that the hose clips (7, 7') have two apertures (11) along the direction of extent of the supporting element (2), and in that in its end sections the supporting element (2) comprises bending sections (9) which protrude out
15 of the apertures (11) which face away from the outflow opening, it being possible for the supporting element (2) to be fixed on the hose clips (7, 7') by the bending sections (9) being bent transversely with respect to the direction of extent of the apertures
20 (11).

20. The airbag unit as claimed in one of claims 15 to 19, characterized in that the retaining device has at least one fastening element (800, 840) which secures
25 the gas generator on the supporting element (2) and surrounds the gas generator (4) in the region of the outflow openings (40) in such a gastight manner that a chamber leading into the airbag (3) is formed.

30 21. The airbag unit as claimed in one of claims 15 to 19, characterized in that the retaining device has at least one fastening element (860, 58) which secures the gas generator on the supporting element (2) and surrounds the gas generator

(4) in the region of the outflow openings in such a gastight manner that only one outflow opening facing in the direction of a throughflow opening (10) of the retaining element (1) remains free.

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22. The airbag unit as claimed in claim 20 or 21, characterized in that the fastening element (800, 840, 860) is designed as a separate part which can be connected to the supporting part (2), in particular by
10 pushing on, conical pressing or screwing.

23. The airbag unit as claimed in claim 20 or 21, characterized in that the fastening element (58) is of bell-shaped design and has a threaded attachment (580)
15 and a screw (582) guided therein, the screw (582) serving for the radial bracing of the gas generator (4) which can be retained in the bell-shaped fastening element (58).

20 24. The airbag unit as claimed in one of claims 20 to 23, characterized in that the fastening element (58) has at least one closure stopper (583) for sealing off an outflow opening of the gas generator (4).

25 25. The airbag unit as claimed in one of claims 20 to 24, characterized in that the retaining device has at least one further, annular fastening element (550) which is connected to the supporting element (2), which serves to hold the gas generator (4) and through which
30 the gas generator (4) can be pushed.

26. The airbag unit as claimed in one of the preceding claims, characterized in that the supporting element (2) is of multi-part design.

5 27. The airbag unit as claimed in claim 26, characterized in that a first part (8) and a second part (8') of the supporting element (2) have a respective cutout (12, 12') and the opening (20) of the supporting element (2) is formed by the adjacent
10 arrangement of the cutouts (12, 12') of the two parts (8, 8') of the supporting element (2).

28. The airbag unit as claimed in claim 26 or 27, characterized in that extensions (81, 81') which at
15 least partially surround the gas generator (4) are provided in each case on the two parts (8, 8') of the supporting element (2).

29. The airbag unit as claimed in one of claims 8 to
20 28, characterized in that the gas generator (4) is designed as a tubular gas generator and the outflow opening (40) is arranged in the circumferential surface thereof.

25 30. The airbag unit as claimed in one of claims 8 to 29, characterized in that the supporting element (2) has a holding device (13) which holds the airbag (3) and forms a storage space (14) for the airbag (3).

30 31. The airbag unit as claimed in at least one of the preceding claims, characterized in that a flat stabilizing element (11) is arranged in such a manner that the retaining element (1) is supported on the supporting element (2)

or on an additional retaining device (7, 7') via the stabilizing element (90).

32. The airbag unit as claimed in one of the preceding
5 claims, characterized in that the retaining element (1)
can be fixed on the inside of the airbag (3).

33. The airbag unit as claimed in claim 32,
characterized in that at least one fabric part (300,
10 300') is fastened, in particular sewn, in its edge
region on the inside of the airbag (3) in such a manner
that the retaining element (1) can be fixed in a pocket
formed between the airbag (3) and the fabric part (300,
300').

15 34. The airbag unit as claimed in claim 33,
characterized in that the fabric part (300, 300') is
not connected to the airbag (3) in at least part of the
edge region (320, 320'), thus enabling the retaining
20 element (1) in this part of the edge region (320, 320')
to be introduced into the pocket.

35. The airbag unit as claimed in claim 34,
characterized in that two fabric parts (300, 300') are
25 arranged on the airbag (3) in such a manner that those
parts of the edge region (320, 320') which are not
connected to the airbag (3) are arranged opposite each
other in such a manner that the openings of the two
pockets which are produced point in opposite
30 directions.

36. The airbag unit as claimed in claim 35,
characterized in that the two fabric parts (300, 300')
are arranged one above the other.

37. The airbag unit as claimed in claim 33, characterized in that the fabric part (300) has a slot (330) for the introduction of the retaining element (1).

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38. The airbag unit as claimed in claim 33 or 34, characterized in that at least one tab (360) which is connected to the airbag (3) is guided over the fabric part (300) in such a manner that a retaining element
10 (1) situated in the pocket is secured against sliding out.